

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A method for enabling the creation and management of a platform-independent applications whose appearance and functionality is consistently propagated across heterogeneous device types for cross-device interoperability, replicability, and compatibility of applications and data with a consistent user experience, the method comprising:

~~generating-receiving, by a device, a platform-independent data superstructure defining the appearance and behavior of an application independent of characteristics of a digital processing device on which the application is to be instantiated, the platform-independent data superstructure storing an application state, program code and internal logic of the application;~~

~~instantiating, by a superstructure-dedicated operating system, the application in the device in accordance with the received superstructure;~~

~~receiving, by the platform-independent data superstructure, from a device-native operating system via communication with the superstructure-dedicated operating system, at least one application event generated by the instantiated application and representative of an update to the application state of the application;~~

~~updating, by the platform-independent data superstructure, in response to generated application events, information in a first segment of the superstructure associated with the at least one application events, responsive to receiving the at least one application event and independent of an update to a second segment in the superstructure; the application events including events generated by the application instantiated in the device and representative of an application state; and~~

~~updating, in accordance with the superstructure segment update, the application state in the device; wherein:~~

~~the superstructure is an XML information structure;~~

~~application appearance and behavior are encapsulated within the superstructure; and~~

~~application events are expressed to the superstructure via a pathway including a device-native operating system (OS) and a superstructure-dedicated OS acting as an intermediary between the device-native OS and the superstructure; whereby:~~

~~a defined portion of the application can be addressed and updated in response to application events without necessitating update of the entire application; and~~

~~the appearance and behavior of the application can be propagated with consistency across heterogeneous device types, to enable cross-device interoperability, replicability, and compatibility of applications and data with a consistency of user experience.~~

2. (Currently amended) A The method of claim 1, wherein the step of receiving further comprises for enabling the creation and management of platform-independent applications, the method comprising: generating, receiving, by the device, a platform-independent, data-hierarchical information superstructure defining the appearance and behavior of an application and storing an application state, program code and internal logic of the application, independent of characteristics of a digital processing device on which the application is to be instantiated;

~~instantiating the application in the device in accordance with the superstructure;~~

~~updating, in response to generated application events, information in a segment of the superstructure associated with the application events, the application events including events generated by the application instantiated in the device and representative of an application state, and~~

~~updating, in accordance with the superstructure segment update, the application state in the device, wherein:~~

~~the superstructure is a hierarchical information structure;~~

~~application appearance and behavior are encapsulated within the superstructure, and~~

~~application events are expressed to the superstructure via a pathway including a device-native operating system (OS) and a superstructure-dedicated OS acting as an intermediary between the device-native OS and the superstructure, whereby:~~

~~a defined portion of the application can be addressed and updated in response to application events without necessitating update of the entire application, and~~

~~the appearance and behavior of the application can be propagated with consistency across heterogeneous device types, to enable cross-device interoperability, replicability, and compatibility of applications and data with a consistency of user experience.~~

3. (Currently amended) The method of claims 1 ~~or 2~~ further comprising:
~~generating, receiving, by the device, a message containing a data object of a defined type operable to instantiate the application in the a device; and,~~

~~transmitting the message to a device operable to instantiate the application in accordance with the data object.~~

receiving the message at the device, and
instantiating the application in the device in accordance with the data object in the received message.

4. (Currently amended) The method of claim ~~3-1~~ wherein the instantiating of the ~~superstructure application inside the target device~~ occurs substantially when the application is invoked.

5. (Currently amended) The method of claim ~~3-1~~ wherein the instantiating of the ~~superstructure application inside the target device~~ occurs at an application-provisioning time prior to application run-time.

6. (Currently amended) The method of claim ~~3-1~~ further ~~wherein~~ comprising the steps of:
identifying, by a provisioning application on a first device ~~located within its an operating environment on the first device,~~ a first superstructure for generating a new application superstructure to be expressed ~~to on~~ a second device;
generating, by the provisioning application, ~~generates a defined data object to be used to~~ for expressing the new application superstructure ~~to on~~ the second device;
transmitting, to the second device, ~~the data object is transmitted to the second device via~~ a message; and
creating, by the second device, ~~creates a~~ the new application superstructure, ~~from responsive to receiving the data object in the message.~~

7. (Currently amended) The method of claim ~~3-1~~ further ~~wherein~~ further comprising the steps of:
identifying, by a provisioning application on a first device ~~located within its an operating environment on the first device,~~ a predefined data object that expresses a new application superstructure for a second device;
transmitting, to the second device, ~~the predefined data object is transmitted to the second device via a message;~~ and
creating, by the second device, ~~creates its own copy of the new application superstructure, responsive to receiving from the data object in the message.~~

8. (Currently amended) The method of claim ~~3-1~~ further ~~wherein~~ further comprising the steps of:

~~maintaining by a first device, maintains an application capable of accepting input from a user to create an interactive message;~~

~~translating, by the first application, translates an operational a portion of the message into a new superstructure-based application operable to display the message or cause interactive operations within the message; and~~

~~transmitting, by the first application, initiates the transmission of the superstructure of the new application to a receiving second device.~~

9. (Currently amended) The method of claim ~~8, 3~~ further ~~wherein~~ further comprising: the step of the transmission of the superstructure includes converting the superstructure into a temporary form that is transmitted, received, and decoded back into an original form on the receiving device; and

~~the receiving device maintains~~ maintaining, by the second device, an application that receives the superstructure in its temporary form, decodes it, and causes the message-bearing superstructure to operate, thereby rendering the message.

10. (Currently amended) The method of claims 1 ~~or 3~~ wherein ~~wherein~~ the step of receiving further comprises receiving, by the device, for a given state of a selected application, a platform-independent data superstructure having a substantially invariant ~~the organization of the superstructure is substantially invariant~~, regardless of the device, platform or device-native operating system environment in which the associated application is instantiated, so as to maintain a consistent application appearance and behavior across heterogeneous devices, platforms or device-native operating system environments.

11. (Currently amended) The method of claims 1 ~~or 3~~ wherein ~~the step of receiving~~ further comprises receiving, by the device, a platform-independent data superstructure ~~the superstructure defines~~ defining a plurality of rules of appearance and behavior of the application which are substantially invariant across heterogeneous devices, platforms or device-native operating system environments.

12. (Currently amended) The method of claims 1 ~~or 3~~ wherein ~~the step of receiving~~ further comprises receiving, by the device, substantially identical application source code ~~in the platform-independent data superstructure as source code used~~ ~~can be used~~ across heterogeneous devices, platforms or device-native operating system environments.

13. (Currently amended) The method of claim 1 ~~or 3~~ wherein ~~the step of initiating the application~~ further comprises initiating, by the superstructure-dedicated operating system, an

application including es a user interface, ~~and wherein the user interface has~~ having a substantially identical appearance and behavior across heterogeneous devices, platforms or device-native operating system environments.

14. (Currently amended) The method of claim 1 ~~wherein operation of the application is implemented through operations on the superstructure, and wherein the operation comprises~~ wherein the step of updating information in the segment of the superstructure further comprises the steps of:

~~receiving an application event in the device-native OS,~~

receiving data representative of the at least one application event in the superstructure-dedicated OS,

applying to the superstructure, in response to the received data, a data object, thereby modifying the superstructure, ~~and~~

~~operating the application in the device in accordance with the modified superstructure.~~

15. (Currently amended) The method of claim ~~14~~ 1 further comprising the steps of: generating, by the superstructure-dedicated operating system a modification data object representative of the a modification ~~to be applied~~ to the superstructure,

translating the modification data object into a form suitable for processing by the device-native OS,

receiving in the device-native OS the translated modification data object, and

processing the translated modification data object in the application to update the application.

16. (Original) The method of claim 15 further comprising expressing within the superstructure a mechanism for generating the modification data object.

17. (Currently amended) The method of claim ~~15~~ 14 wherein modifying the superstructure includes transmitting a portion of the superstructure to a processor remote from the device, modifying the transmitted portion, and then returning the modified portion or a new set of operations to update the superstructure.

18. (Currently amended) The method of claim ~~15~~ 14 wherein modifying the superstructure includes using device-native code to implement an interface to modify the superstructure.

19. (Currently amended) The method of claim ~~15~~ 14 wherein the application of changes to the superstructure is implemented by activating program instructions within the superstructure.

20. (Currently amended) The method of claim ~~1 or 3~~ wherein further comprising the step of:

storing, by an application server in communication with the device, a copy of the platform-independent data superstructure is stored on an application server operable to communicate with a remote device across a network comprising the application server, the remote device, and a communications channel therebetween, and the superstructure can including e- at least one data objects operable to instantiate applications in on the remote device;
and

the method further comprising:

transmitting applications from the application server to the device providing communication of applications between the application server and the remote device by replicating data objects in the superstructure to the remote device via the communications channel, so as to enable instantiation of new data objects and applications from the server into the remote device.

21. (Currently amended) A method for enabling the creation and management of a platform-independent applications whose appearance and functionality is consistently propagated across heterogeneous device types for cross-device interoperability, replicability, and compatibility of applications and data with a consistent user experience, the method comprising:

generating-receiving, by a device, a platform-independent data superstructure defining the appearance and behavior of an application-independent of characteristics of a digital processing device on which the application is to be instantiated, the superstructure storing an application state, program code and internal logic of the application;

instantiating, by a superstructure-dedicated operating system, the application in the device in accordance with the received platform-independent data superstructure;

transmitting, to the superstructure-dedicated operating system, by a device-native operating system, at least one application event generated by the instantiated application and representative of an update to the application state of the application;

updating, in response to generated application events, information in a segment of the superstructure associated with the application events, the application events including events

~~generated by the application instantiated in the device and representative of an application state, and~~

~~updating, in accordance with the superstructure segment update, the application state in the device, wherein:~~

~~the superstructure is an XML information structure;~~

~~application appearance and behavior are encapsulated within the superstructure, and~~

~~application events are expressed to the superstructure via a pathway including a device-native operating system (OS) and a superstructure-dedicated OS acting as an intermediary between the device native OS and the superstructure, whereby:~~

~~a defined portion of the application can be addressed and updated in response to application events without necessitating update of the entire application, and~~

~~the appearance and behavior of the application can be propagated with consistency across heterogeneous device types, to enable cross device interoperability, replicability, and compatibility of applications and data with a consistency of user experience, and further wherein:~~

~~when transmitting, by the superstructure-dedicated operating system, to a remote server an application event is expressed to the superstructure, a segment of the superstructure object associated with the at least one application event is transmitted via a communications pathway from the device to a remote server;~~

~~receiving, from the server, processes the object and creates a new modified version of the segment of the superstructure object, generated responsive to the application event, received segment of the superstructure for the new version of the object is transmitted from the server to the device to replacement of the existing version of the segment of the superstructure object, thus updating the segment of the superstructure, and~~

~~instructing, by the superstructure-dedicated OS, causes the device-native OS to update the application state in response to the updated segment of the superstructure.~~

22. (Currently amended) The method of claim 20-21 wherein the network further comprises a plurality of heterogeneous devices, communications channels and communications providers servicing the communications channels, and wherein the superstructure defines a given application to have an appearance and behavior that can be propagated with consistency across heterogeneous devices, communications channels and communications providers, to enable

~~cross device interoperability, replicability, and compatibility of applications and data with a consistency of user experience.~~

23. (Currently amended) The method of claim ~~22-21~~ wherein further comprising:
~~the superstructure can be substantially free of device specific data;~~
~~modifications to modifying the superstructure can be made in a substantially device-~~
independent manner, and
~~expressing a real-time image of an application running in a first device can be expressed~~
across the network from the first device to a second device to yield a viable instantiation of the
application in the second device, regardless of device environment, ~~and~~
~~wherein the organization of the superstructure and the meaning of objects within it~~
~~remains substantially constant between instantiations in various device environments.~~

24. (Currently amended) The method of claim ~~20-21~~ wherein:
~~the superstructure is capable of completely expressing, by the superstructure, the running~~
state and functionality of an application operating in a first device, and
~~instantiating the application can be substantially identically instantiated into on a second~~
device, without loss of state or functionality, by expressing the superstructure ~~into on~~ the second
device.

25. (Original) The method of claim 1 further comprising validating the superstructure
upon or after modification.

26. (Original) The method of claim 1 further comprising validating the superstructure
after modifying the superstructure, the validation including validation of data updated by
processing of an event, so that the modified superstructure cannot express a harmful change to
the device-native OS.

27. (Currently amended) The method of claim 1 further ~~wherein comprising~~
producing, by an application defined by the superstructure, can produce external changes only
by invoking operations that operate on the superstructure.

28. (Original) The method of claim 1 further including providing an interface
between an application and a system service, wherein the interface is defined by interaction
between the superstructure and the superstructure-dedicated OS.

29. (Currently amended) The method of claims ~~An information processing language~~
~~adapted to interface with the structure defined in any of claims 1 or 20-21, further comprising:~~

expressing, by an information processing language adapted to interface with the superstructure, a set of transformations within the superstructure, the information processing language being expressible entirely within the superstructure and capable of expressing a set of transformations within the superstructure, and

modifying, by the information processing language, ~~capable of utilizing and modifying~~ data only within the superstructure, so that: applications utilizing the language cannot affect the state of other applications or

operate outside a bounded application container to affect an underlying device platform.

30. (Original) The method of claim 1 wherein the superstructure can contain stylesheets for defining selected application or presentation characteristics.

31. (Original) The method of claim 30 further comprising configuring stylesheets on a per-device basis.

32. (Original) The method of claim 30 further comprising configuring stylesheets on a per-group-of-devices basis.

33. (Original) The method of claim 30 further comprising expressing stylesheets within the superstructure, independent of device-specific limitations.

34. (Original) The method of claim 30 further comprising selecting a stylesheet at runtime.

35. (Currently amended) The method of any of claims 1 ~~or 3~~ wherein further comprising the step of transmitting an application defined by the superstructure can be transmitted via a peer-to-peer transaction from a first device in which the application is instantiated, to a second device for instantiation in the second device.

36. (Currently amended) The method of claims 1 ~~or 3~~, further comprising: converting at least a portion of the superstructure into a device-portable form, independent of the present state of the application; and

reconstructing the original superstructure portion, on the same or different device context, using the device portable form, without loss of state.

37. (Original) The method of claim 36 wherein the reconstructing includes utilizing a new device-specific stylesheet.

38. (Currently amended) A method-system for enabling the creation and management of a platform-independent applications whose appearance and functionality is consistently

propagated across heterogeneous device types for cross-device interoperability, replicability, and compatibility of applications and data with a consistent user experience, the method comprising:

generating a platform-independent data superstructure defining the appearance and behavior of an application and storing an application state, program code and internal logic of the application; independent of characteristics of a digital processing device on which the application is to be instantiated, wherein the superstructure can be serialized in whole or in part at any time;

at least one application event generated by the application and representative of an application state;

a superstructure-dedicated operating system in communication with a device-native operating system and instantiating the application in the device in accordance with the superstructure and updating, in response to generated application events, information in a segment of the superstructure associated with the at least one application events responsive to receiving the at least one application event and independent of an update to a second segment in the superstructure, the application events

including events generated by the application instantiated in the device and representative of an application state, and updating, in accordance with the superstructure segment update, the application state in the device, wherein:

the superstructure is an XML information structure;

application appearance and behavior are encapsulated within the superstructure, and

application events are expressed to the superstructure via a pathway including a device-native operating system (OS) and a superstructure-dedicated OS acting as an intermediary between the device-native OS and the superstructure, whereby:

a defined portion of the application can be addressed and updated in response to application events without necessitating update of the entire application, and

the appearance and behavior of the application can be propagated with consistency across heterogeneous device types, to enable cross-device interoperability, replicability, and compatibility of applications and data with a consistency of user experience.

39. (Original) The method of claim 36 further comprising:

using the device-portable form as an intermediate or permanent storage format for recording data within the superstructure.

40. (Currently amended) The method of any of claims 1 or ~~3-21~~ wherein the superstructure is organized into objects and classes.

41. (Currently amended) ~~A method for enabling the creation and management of platform-independent applications; the method comprising~~The system of claim 38 wherein the platform-independent data superstructure further comprises at least one data structure that may be interpolated when the device-native operating system requests data from the platform-independent data superstructure. :

~~generating a platform-independent data superstructure defining the appearance and behavior of an application independent of characteristics of a digital processing device on which the application is to be instantiated;~~

~~instantiating the application in the device in accordance with the superstructure;~~

~~updating, in response to generated application events, information in a segment of the superstructure associated with the application events; the application events including events generated by the application instantiated in the device and representative of an application state; and~~

~~updating, in accordance with the superstructure segment update, the application state in the device; wherein:~~

~~the superstructure is an XML information structure;~~

~~application appearance and behavior are encapsulated within the superstructure;~~

~~the superstructure can contain data structures adapted to be interpolated;~~

~~interpolation can occur whenever a device-native operating system requests data from the superstructure;~~

~~and~~

~~application events are expressed to the superstructure via a pathway including a device-native operating system (OS) and a superstructure-dedicated OS acting as an intermediary between the device-native OS and the superstructure; whereby:~~

~~a defined portion of the application can be addressed and updated in response to application events without necessitating update of the entire application; and~~

~~the appearance and behavior of the application can be propagated with consistency across heterogeneous device types; to enable cross-device interoperability, replicability, and compatibility of applications and data with a consistency of user experience.~~

42. (Currently amended) The method of claim 3 wherein a first device can transmit to a second device a message containing an application event item, ~~causing and thereby cause the~~ second device to place the application event item into a processing queue of the second device.

43. (Original) The method of claim 20 wherein application logic can be distributed across the network by obtaining a portion of the logic from the remote device and transmitting it in a hierarchical form to the server without the necessity of adapting code therefor.

44. (Original) The method of claim 20 further comprising providing updates to an application's state from the server to a remote device, by defining a minimal change set to the application's state and transferring it across the network from the server to the remote device, without the necessity of adapting code therefor.

45. (Currently amended) The method of claims 1, ~~2 or 3~~ further comprising incorporating media assets into the superstructure, for reference by ~~running-executing~~ applications.

46. (Currently amended) The method of claims 1, ~~2 or 3~~ further comprising incorporating by reference media assets outside the superstructure, for reference by ~~running~~ executing applications.

47. (Currently amended) The method of claim 1, wherein the step of receiving further comprises receiving, by A method for enabling, in a wireless messaging device operable to communicate with a network serviced by a communications carrier, the platform-independent data superstructure enabling, the creation, modification, and management of platform-independent user interfaces and associated display elements for an application having an appearance and behavior propagated with consistency across a network of heterogeneous platforms and communications carrier protocols, the method comprising:

generating a platform-independent data superstructure, the platform-independent data superstructure having a state defining a user interface, maintaining a display state of the user interface and storing an application state, program code and internal logic of the application;

instantiating in the wireless device a messaging an application including an associated user interface, the behavior and state of the application and the associated user interface being defined by the superstructure;

updating, in response to generated application events, a segment of the superstructure associated with the application events, the application events including associated user interface events;

~~updating, in accordance with the superstructure segment update, the application state and user interface state in the wireless device;~~

~~whereby:~~

~~a defined portion of the application can be addressed and updated in response to application events without necessitating update of the entire application; and~~

~~the look and behavior of the application can be propagated with consistency across a network of heterogeneous platforms and communications carrier protocols.~~

48. (Currently amended) The method of claim 47 further comprising the step of wherein:

updating, in accordance with a superstructure segment update, the application state and the user interface state on the wireless messaging device.

~~the superstructure is an XML information structure;~~

~~application appearance and behavior are encapsulated within the superstructure; and~~

~~application events are expressed to the superstructure via a pathway including a device-native operating system (OS) and a superstructure dedicated OS acting as an intermediary between the device native OS and the superstructure; whereby:~~

~~a defined portion of the application can be addressed and updated in response to application events without necessitating update of the entire application; and~~

~~the appearance and behavior of the application can be propagated with consistency across heterogeneous device types, to enable cross device interoperability, replicability, and compatibility of applications and data with a consistency of user experience.~~

49. (Canceled).

50. (Currently amended) The method of claims 47 ~~or 48~~ further comprising the step of updating, in response to generated application events, a first segment of the superstructure associated with the application events independent of an update to a second segment in the superstructure, the application events including associated user interface events.

~~wherein the superstructure defines rules of appearance and behavior of the application which are substantially invariant across heterogeneous devices, platforms or device-native operating system environments.~~

51. (Canceled).

52. (Currently amended) The method of claims 47 ~~or 48~~ wherein the application includes a user interface, and wherein the user interface has a substantially identical appearance

and behavior across heterogeneous devices, platforms or device-native operating system environments.

53. – 69. (Canceled).

70. (Currently amended) The method of claim 47 further comprising the step of requesting, by at least one wherein the application event, a modification to s include requests to modify the user interface.

71. (Currently amended) The method of claim 47 ~~wherein further comprising the step of requesting, by the at least one application event, access to at least one template element stored in a library of platform-independent user interface templates provided by the platform-independent data superstructure includes representation of a library of platform-independent user interface template elements, and the application events include requests for one or more template elements.~~

72. (Currently amended) The method of claim 71, further comprising the step of requesting, by the at least one wherein application event, at least one of an addition, subtraction, replacement or other modification, to the at least one template element stored in a library of platform-independent user interface templates include requests to add, subtract, replace or otherwise modify elements of the user interface using template elements.

73. (Currently amended) The method of claim ~~72~~ 47, further comprising the step of requesting, by the at least one application event, an addition of wherein application events include requests to enter user-defined content into the user interface.

74. (Canceled).

75. (Currently amended) The method of claim ~~74-71~~ further comprising the step of enabling the creation of templates at a remote processor for subsequent representation in the superstructure and instantiation in the wireless device.

76. (Original) The method of claim 75 wherein the remote processor is a personal computer.

77. (Original) The method of claim 47, further comprising configuring the user interface to respond to controls adapted to be actuated by a user's thumbs.

78. (Original) The method of claim 47 further comprising configuring the user interface to provide visual, sonic, tactile or other human-perceptible indications in response to commands entered by a user, or other application events.

79. (Original) The method of claim 47 further comprising configuring the user interface to enable a user to view, generate, send and manage messages.

80. (Original) The method of claim 79 further comprising configuring the user interface to enable a user to generate messages containing any of text, images, sound, or other media content.

81. (Currently amended) The method of claim 1 further comprising the steps of
~~In a digital, processing device running at least one application in accordance with a~~
~~superstructure-based application environment (SBAE), a method of updating the application, the~~
~~method comprising:~~

~~executing, by the device, the application in accordance with the received superstructure;~~
~~transmitting/receiving, by the device, via a wireless communications channel accessible~~
~~by the a superstructure-based application environment SBAE, an application update, the~~
~~application update including a data object operable to update a first segment of a platform-~~
~~independent data the superstructure in the superstructure-based application environment,~~
~~SBAE independent of an update to a second segment in the platform-independent data~~
~~superstructure; and~~

~~receiving the data object, and~~
~~updating/receiving, by the device, a command to update the application in accordance~~
~~with the application update, and wherein: application appearance and behavior are encapsulated~~
~~within and defined by the superstructure, and~~

~~a defined portion of the application can be addressed and updated in response to~~
~~application events without necessitating update of the entire application.~~

82. (Currently amended) The method of claim 81 further comprising ~~updating~~
~~receiving, by an SBAE application across a plurality of devices, by broadcasting a broadcasted~~
~~application updates and command to update an application to the plurality of devices.~~

83. (Currently amended) ~~In a network of digital processing devices operable to~~
~~communicate over a wireless communications channel, a method for enabling the creation and~~
~~updating of applications, the method comprising: The method of claim 1 further comprising the~~
~~step of:~~

~~generating a platform-independent data superstructure defining the appearance and~~
~~behavior of an application independent of characteristics of a digital processing device on which~~
~~the application is to be instantiated.~~

~~instantiating the application in the one or more digital processing devices in accordance with the superstructure;~~

~~updating the application state in the one or more devices, the updating including: broadcasting~~

~~transmitting, by the device, to a plurality of to one or more of the devices in the a network, via a wireless communications channel, at least one application update;~~

~~receiving in the one or more devices the application update, and~~

~~transmitting, by the device, to the plurality of devices in the network, a command to update ing, in the plurality of one or more devices, the an executing running application; in accordance with received application update, and wherein:~~

~~application appearance and behavior are encapsulated within the superstructure, and~~

~~a defined portion of the application can be addressed and updated in response to application events without necessitating update of the entire application.~~

84. (Currently amended) The method of claim 83 In a network of digital processing devices operable to communicate over a wireless communications channel, a method for enabling the creation and updating of applications or data, the method comprising wherein the step of transmitting the at least one update further comprises: transmitting, by the device, to a plurality of devices in the network, via a wireless communications channel, at least one update to a state of an executing application.

~~generating a platform independent data superstructure defining the appearance and behavior of an application independent of characteristics of a digital processing device on which the application is to be instantiated;~~

~~instantiating the application in the one or more digital processing devices in accordance with the superstructure;~~

~~updating application state in the one or more devices, the updating including:~~

~~broadcasting to one or more of the devices in the network at least one update;~~

~~receiving in the one or more devices the update, and~~

~~updating, in the one or more devices, the running application, in accordance with received update, and wherein:~~

~~application appearance and behavior are encapsulated within the superstructure, and~~

~~a defined portion of the application can be addressed and updated in response to application events without necessitating update of the entire application.~~

85. (Original) The method of any of claims 82, 83 or 84 further comprising: ensuring that each device is in a consistent, known state at the time of broadcasting and that the update remains whole and complete.

86. (Original) The method of any of claims 82, 83 or 84 further comprising: broadcasting, in an all-or-nothing manner, only complete segments of application update.

87. (Currently amended) The method of claim 1, further comprising the step of: ~~In a superstructure-based application environment, a method of enabling the storage and recovery of non-conversational data, the method comprising:~~

~~generating a data superstructure defining the appearance and behavior of an application; the superstructure being serializable in whole or in part;~~

using an internal representation of the superstructure to store private data relating to requests from the application or the state or data type of a superstructure node, wherein the private data is not serialized when the application is paused, halted or migrated, and is stored in a manner conveniently accessible at application runtime, such that this non-conversational data is coherently recoverable so long as the private data can be re-established upon de-serialization, based on public data that has been maintained in the superstructure.

88. (Canceled).

89. (Currently amended) The method of claim 1, further comprising the step of: ~~A method for enabling the creation and management of platform-independent applications, the method comprising:~~

~~generating a platform-independent data superstructure defining the appearance and behavior of an application-independent of characteristics of a digital processing device on which the application is to be instantiated;~~

~~instantiating the superstructure in the device;~~

~~updating, in response to events associated with the application running in the device in accordance with the superstructure, information in a segment of the superstructure associated with the application, the events including events generated by the application and representative of an application state; and~~

~~updating, in accordance with the superstructure segment update, the application state in the device; wherein:~~

~~the superstructure is an XML information structure;~~

~~application appearance and behavior are encapsulated within the superstructure; and~~

~~events are expressed to the superstructure via a pathway including a device-native operating system (OS) and a superstructure-dedicated OS acting as an intermediary between the device-native OS and the superstructure, whereby:~~

~~a defined portion of the application can be addressed and updated in response to events without necessitating update of the entire application; and~~

~~the appearance and behavior of the application can be propagated with consistency across heterogeneous device types, to enable cross-device interoperability, replicability, and compatibility of applications and data with a consistency of user experience.~~

90. (Canceled).

91. (Currently amended) A system for enabling the creation and management of a platform-independent applications, whose appearance and functionality is consistently propagated across heterogeneous device types for cross-device interoperability, replicability, and compatibility of applications and data with a consistent user experience, the system comprising:

means for generating-receiving, by a device, a platform-independent data superstructure defining the appearance and behavior of an application independent of characteristics of a digital processing device on which the application is to be instantiated, the platform-independent data superstructure storing an application state, program code and internal logic of the application;

means for instantiating, by a superstructure-dedicated operating system, the superstructure in the device,

means for receiving, by the platform-independent data superstructure, from a device-native operating system via communication with the superstructure-dedicated operating system, at least one application event generated by the instantiated application and representative of an update to the application state of the application;

means for updating, by the platform-independent data superstructure, in response to events associated with the application running in the device in accordance with the superstructure, information in a first segment of the superstructure associated with the at least one application event, responsive to receiving the at least one application event and independent of an update to a second segment in the superstructure; the events including events generated by the application and representative of an application state; and

means for updating, in accordance with the superstructure segment update, the application state in the device, wherein:

the superstructure is an XML information structure;

~~application appearance and behavior are encapsulated within the superstructure, and events are expressed to the superstructure via a pathway including a device-native operating system (OS) and a superstructure-dedicated OS acting as an intermediary between the device-native OS and the superstructure, whereby:~~

~~a defined portion of the application can be addressed and updated in response to events without necessitating update of the entire application, and~~

~~the appearance and behavior of the application can be propagated with consistency across heterogeneous device types, to enable cross-device interoperability, replicability, and compatibility of applications and data with a consistency of user experience.~~

92. (Currently amended) The system of claim 91, wherein the means for receiving the platform-independent data superstructure further comprises ~~A system for enabling the creation and management of platform-independent applications, the system comprising:~~

~~means for generating a platform-independent data superstructure defining the appearance and behavior of an application independent of characteristics of a digital processing device on which the application is to be instantiated;~~

~~means for instantiating the superstructure in the device;~~

~~means for updating, in response to events associated with the application running in the device in accordance with the superstructure, information in a segment of the superstructure associated with the application, the events including events generated by the application and representative of an application state; and~~

~~means for updating, in accordance with the superstructure segment update, the application state in the device, wherein:~~

~~means for receiving, by the device, a platform-independent data superstructure defining the appearance and behavior of an application, the platform-independent data superstructure storing an application state, program code and internal logic of the application, the superstructure is and comprising a hierarchical information structure,~~

~~application appearance and behavior are encapsulated within the superstructure, and events are expressed to the superstructure via a pathway including a device-native operating system (OS) and a superstructure-dedicated OS acting as an intermediary between the device-native OS and the superstructure, whereby:~~

~~a defined portion of the application can be addressed and updated in response to events without necessitating update of the entire application, and~~

~~the appearance and behavior of the application can be propagated with consistency across heterogeneous device types, to enable cross-device interoperability, replicability, and compatibility of applications and data with a consistency of user experience.~~

93. (Currently amended) The system of claim 91 further comprising A system for enabling the creation and management of platform-independent applications, the system comprising:

~~means for generating a platform-independent data superstructure defining the appearance and behavior of an application independent of characteristics of a digital processing device on which the application is to be instantiated;~~

~~means for instantiating the application in the device in accordance with the superstructure.;~~

~~means for updating, in response to generated application events, information in a segment of the superstructure associated with the application events, the application events including events generated by the application instantiated in the device and representative of an application state, and~~

~~means for updating, in accordance with the superstructure segment update, the application state in the device, wherein:~~

~~the superstructure is an XML information structure;~~

~~application appearance and behavior are encapsulated within the superstructure, and~~

~~application events are expressed to the superstructure via a pathway including a device-native operating system (OS) and a superstructure-dedicated OS acting as an intermediary between the device-native OS and the superstructure, whereby:~~

~~a defined portion of the application can be addressed and updated in response to application events without necessitating update of the entire application, and~~

~~the appearance and behavior of the application can be propagated with consistency across heterogeneous device types, to enable cross-device interoperability, replicability, and compatibility of applications and data with a consistency of user experience.~~

94. (Currently amended) The system of claim 91 wherein the means for receiving further comprises means for receiving, by the device, a platform-independent data superstructure defining the appearance and behavior of an application, the platform-independent data superstructure storing an application state, program code and internal logic of the application,

~~and comprising an XML information superstructure. A system for enabling the creation and management of platform-independent applications, the system comprising:~~

~~means for generating a platform-independent data superstructure defining the appearance and behavior of an application independent of characteristics of a digital processing device on which the application is to be instantiated;~~

~~means for instantiating the application in the device in accordance with the superstructure;~~

~~means for updating, in response to generated application events, information in a segment of the superstructure associated with the application events, the application events including events generated by the application instantiated in the device and representative of an application state; and~~

~~means for updating, in accordance with the superstructure segment update, the application state in the device, wherein:~~

~~the superstructure is a hierarchical information structure;~~

~~application appearance and behavior are encapsulated within the superstructure; and~~

~~application events are expressed to the superstructure via a pathway including a device-native operating system (OS) and a superstructure-dedicated OS acting as an intermediary between the device-native OS and the superstructure, whereby:~~

~~a defined portion of the application can be addressed and updated in response to application events without necessitating update of the entire application; and
the appearance and behavior of the application can be propagated with consistency across heterogeneous device types; to enable cross-device interoperability, replicability, and compatibility of applications and data with a consistency of user experience.~~

95. (New) The method of claim 1, wherein the step of receiving the superstructure further comprises receiving, by the device, a platform-independent XML information superstructure defining the appearance and behavior of an application, the superstructure storing state, program code and internal logic of the application.

96. (New) The method of claim 1, wherein the step of receiving the superstructure further comprises receiving, by the device, a platform-independent data superstructure defining the

appearance and behavior of an application, the superstructure serializable in whole or in part at any time and storing state, program code and internal logic of the application.

97. (New) The method of claim 1 further comprising the step of encapsulating, by the platform-independent data superstructure, program code defining appearance and behavior of the application.

98. (New) The method of claim 1, wherein the step of receiving the superstructure further comprises receiving, by the device, a platform-independent data superstructure comprising at least one data structure that may be interpolated when the device-native operating system requests data from the platform-independent data superstructure.

99. (New) The method of claim 21, wherein the step of receiving the superstructure further comprises receiving, by the device, a platform-independent XML information superstructure defining the appearance and behavior of an application, the superstructure storing state, program code and internal logic of the application.

100. (New) The method of claim 21, wherein the step of receiving the superstructure further comprises receiving, by the device, a platform-independent hierarchical information superstructure defining the appearance and behavior of an application, the superstructure storing state, program code and internal logic of the application.

101. (New) The method of claim 21 further comprising the step of encapsulating, by the platform-independent data superstructure, program code defining appearance and behavior of the application.

102. (New) The method of claim 21, wherein the step of receiving the superstructure further comprises receiving, by the device, a platform-independent data superstructure defining the appearance and behavior of an application, the superstructure serializable in whole or in part at any time and storing state, program code and internal logic of the application.

103. (New) The method of claim 21, wherein the step of receiving the superstructure further comprises receiving, by the device, a platform-independent data superstructure comprising at least one data structure that may be interpolated when the device-native operating system requests data from the platform-independent data superstructure.

104. (New) The system of claim 38, wherein the platform-independent data superstructure further comprises a platform-independent XML information superstructure.

105. (New) The system of claim 38, wherein the platform-independent data superstructure further comprises a platform-independent hierarchical information superstructure.

106. (New) The system of claim 38, wherein the platform-independent data superstructure encapsulates program code defining appearance and behavior of the application.

107. (New) The system of claim 38, wherein the platform-independent data superstructure is serializable in whole or in part at any time.

108. (New) The system of claim 91, wherein the means for receiving further comprises means for receiving, by a device, a platform-independent XML information superstructure.